

**UNITED STATES PATENT AND TRADEMARK OFFICE**

Appellant: Robert M. Andres  
Serial No.: 10/820,289  
Filed: April 8, 2004  
Group Art Unit: 3616  
Examiner: Dunn, David R.  
Title: *VEHICLE SPEED RELATED ALGORITHM FOR AN INFLATABLE  
RESTRAINT SYSTEM*

Commissioner for Patents  
Mail Stop Appeal Brief-Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**APPEAL BRIEF**

Dear Sir:

Appellant submits this Appeal Brief pursuant to the Notice of Appeal filed April 10, 2008.

**I. REAL PARTY IN INTEREST**

The real party in interest is Siemens VDO Automotive Corporation, assignee of the present invention.

**II. RELATED APPEALS AND INTERFERENCES**

There are no prior or pending appeals, interferences or judicial proceedings which may directly affect or may be directly affected by or have a bearing on the Board's decision in this appeal.

### **III. STATUS OF CLAIMS**

Claims 1, 4-16 and 10-15 are pending, rejected and herein appealed.

### **IV. STATUS OF AMENDMENTS**

All amendments have been entered.

### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

Proper discrimination of must-deploy side impact events from other non-deploy events and abuse events may be difficult due to the aggressive deploy times required to properly deploy the airbag through the gap between the passenger and the side of the vehicle. It may be especially challenging to activate restraints in response to contact with stationary objects, such as poles or trees, while not deploying on certain static abuse events such as extreme door slams or hammer impacts.

The present application is directed to an algorithm which discriminates a deploy side impact event from a non-deploy side impact event for a side air bag system.

#### **Summary of Claim 1**

Referring in particular to Figures 1 and 2, claim 1 is directed to a method of deployment discrimination for an air bag deployment command. [Page 4, lines 10-12] The method includes:

- (1) determining whether a vehicle 10 is traveling above a predetermined speed; [Page 4, lines 15-21]
- (2) selectively sensitizing a deployment algorithm decision threshold 14 for a side airbag 18 in response to said step (1); [Page 4, lines 15-21]
- (3) determining whether the vehicle 10 is traveling below a predetermined speed for a predetermined time; and [Page 4, lines 15-21]
- (4) selectively desensitizing the deployment algorithm decision threshold 14 for the side airbag 18 in response to said step (3). [Page 4, lines 15-21]

### **Summary of Claim 10**

Referring in particular to Figures 1 and 2, claim 10 is directed to a method of deployment discrimination for an airbag deployment command. The method includes:

- (1) determining whether a vehicle 10 is traveling below a predetermined speed for a predetermined time; and [Page 4, lines 15-21]
- (2) selectively desensitizing a deployment algorithm decision threshold 14 for a side airbag 18 in response to said step (1). [Page 4, lines 15-21]

### **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 4, 5, and 15 stand finally rejected under 35 U.S.C. §112, first paragraph.

Claims 1, 10, and 15 stand finally rejected under 35 U.S.C. §102(b) as being anticipated by *Okada* (6305709).

Claim 6 stands finally rejected under 35 U.S.C. §103(a) as being unpatentable over *Okada* in view of *Drummond*.

Claims 11-14 stand finally rejected under 35 U.S.C. §103(a) as being unpatentable over *Okada*

### **VII. ARGUMENT**

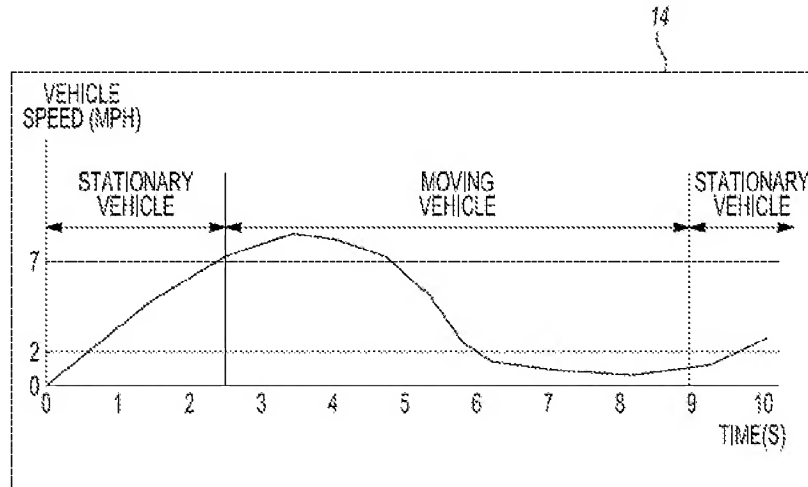
#### **§112 REJECTIONS**

##### **Claim 4, 5, and 15**

Claims 4, 5, and 15 were rejected under 35 U.S.C. §112, first paragraph.

Appellant respectfully traverses this rejection. The Examiner apparently rejects the limitation independent of a crash event and suggests this limitation was not reasonably or

sufficiently described in the specification as originally filed. This cannot be sustained. Appellant wishes to draw the Board's attention to Figure 2 which illustrates the speed related deployment discrimination in which the deployment algorithm decision threshold increases and then later decreases thereby reasonably conveying to one skilled in the relevant art that the deployment algorithm decision threshold is adjusted independent of a crash event.



**Fig-2**

Furthermore, not only did the deployment algorithm decision threshold increase, it then later decreased while the vehicle was moving. That is, the algorithm decision threshold increases and decreases without the occurrence of a crash event. This sort of response supports Appellant's features in claims 4, 5, and 15 and overcomes the Examiner's rejections.

**§102(b) REJECTIONS****Claims 1, 10 and 15**

Claims 1, 10, and 15 were rejected under 35 U.S.C. §102(b) as being anticipated by *Okada* (6305709).

*Okada* utilizes an acceleration sensor for detecting an acceleration applied to a vehicle as a result of a collision then utilizes an acceleration to speed converting means which inputs a speed into a crash state judging means for determining the type of collision based on the value of the speed signal from the acceleration to speed converting means. [See *Okada* claim 1.]

1. An airbag unit provided in a vehicle, comprising:
  - an acceleration sensor for detecting an acceleration applied to said vehicle as a result of a collision, and generating an acceleration signal corresponding to the detected acceleration;
  - an acceleration-to-speed converting means for inputting said acceleration signal fed from said acceleration sensor and converting it to a speed signal;
  - a crash state judging means for determining the type of collision based on the value of the speed signal fed from said acceleration-to-speed converting means and producing a crash state judging signal indicative of the judged type of collision;
  - first and second threshold generating means each for selecting and outputting a threshold on the basis of said crash state judging signal;
  - a first comparing means for comparing the threshold from said first threshold generating means and said acceleration signal fed from said acceleration sensor, and outputting a first crash signal when said acceleration signal exceeds said threshold;
  - a second comparing means for comparing the threshold from said second threshold generating means and said speed signal fed from said acceleration-to-speed converting means, and outputting a second crash signal when said speed signal exceeds said threshold from said second threshold generating means; and
  - an activation control means for comparing the first crash signal from said first comparing means and the second crash signal from said second comparing means, and outputting an inflation signal for inflation of an airbag provided in said vehicle in response to a predetermined result of said comparison.

That is, *Okada* only operates *in response* to an impact event. *Okada* even specifically discloses a threshold mode L'1 when the crash state judging means 46 judges that the speed signal is within the range between the speed levels 0 and V1 at the timing t2. [See Col. 7, lines 46-49.] This is a type of crash determination. [Col. 7, lines 57-64.] Under no proper interpretation may this type of crash determination be interpreted as desensitizing a deployment algorithm decision threshold. In fact, *Okada* operates only after receiving a trigger signal from the triggering/resetting signal means 44. [Col. 7, lines 25-33.] *Okada* is therefore a control for how the airbag deploys – not whether the airbag deploys as recited and claimed by Appellant. Appellant respectfully requests this rejection be overturned.

Notably, claims 1, 10, and 15 recite desensitizing the deployment algorithm which is simply inapplicable and unachievable by the *Okada* reference which controls how the airbag deploys, not whether the airbag deploys. That is, *Okada* operates after the trigger signal is activated and it would make no sense to desensitize the algorithm after the airbag triggering decision has been made.

### **§103(a) REJECTIONS**

#### **Claim 6**

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Okada* in view of *Drummond*.

The Examiner relies on *Drummond* only for multiple satellite sensors. Yet this fails to correct the deficiency of *Okada* discussed above and as such claim 6 is properly allowable.

#### **Claims 11-14**

Claims 11-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Okada*.

The Examiner argues that the speed of 7 miles per hour (or 2 miles per hour) is just discovering of an optimum or workable range. Appellant respectfully traverses this rejection as Appellant does not simply claim a particular range, but a method of deployment discrimination which desensitizes a deployment algorithm decision threshold in response to whether the vehicle is traveling below a predetermined speed for a predetermined time. That is, the claims specifically relate a predetermined speed to a predetermined time.

### **VIII. CONCLUSION**

For the above reasons, the rejections by the Examiner should be reversed. The Commissioner is authorized to charge the \$510 filing fee and \$120 one month extension to Deposit Account No. 50-1482 and any additional fees or credit any overpayments.

Respectfully Submitted,

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**CLAIMS APPENDIX**

1. A method of deployment discrimination for an air bag deployment command comprising the steps of:

- (1) determining whether a vehicle is traveling above a predetermined speed;
- (2) selectively sensitizing a deployment algorithm decision threshold for a side airbag in response to said step (1);
- (3) determining whether the vehicle is traveling below a predetermined speed for a predetermined time; and
- (4) selectively desensitizing the deployment algorithm decision threshold for the side airbag in response to said step (3).

4. A method as recited in claim 1, wherein said step (2) further comprises the step of:

adjusting a safing level of the deployment algorithm decision threshold independent of a crash event.

5. A method as recited in claim 1, wherein said step (2) further comprises the step of:

adjusting a plausibility level of the deployment algorithm decision threshold independent of a crash event.



6. A method as recited in claim 1, wherein said step (2) further comprises the step of:

requiring a predetermined input level from a multiple of satellite sensors.

10. A method of deployment discrimination for an airbag deployment command comprising the steps of:

(1) determining whether a vehicle is traveling below a predetermined speed for a predetermined time; and

(2) selectively desensitizing a deployment algorithm decision threshold for a side airbag in response to said step (1).

11. A method as recited in claim 1, wherein said step (3) further comprises a step of:

(a) determining whether the vehicle is traveling at a speed less than 7 miles per hour for the predetermined time.

12. A method as recited in claim 10, wherein said step (2) further comprises a step of:

(a) determining whether the vehicle is traveling at a speed less than 7 miles per hour for the predetermined time.

13. A method as recited in claim 11, wherein said step (3) further comprises a step of:

(b) determining whether the vehicle is traveling at a speed less than 2 miles per hour for the predetermined time.

14. A method as recited in claim 1, wherein said step (3) further comprises a step of:

(a) determining whether the vehicle is traveling at a speed less than 2 miles per hour for the predetermined time.

15. A method as recited in claim 1, wherein said step (4) further comprises a step of:

(a) desensitizing the deployment algorithm decision threshold independent of a crash event.

**RELATED PROCEEDINGS APPENDIX**

There are no related proceedings.

**EVIDENCE APPENDIX**

None.